National PROPANE GAS Association

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Re: Comments on November 2004 Draft Report on Indoor Air Pollution in California

The National Propane Gas Association (NPGA) is the national trade association of the propane industry having a membership of about 3,800 companies, with 39 state and regional associations representing members in all 50 states. NPGA's membership includes retail marketers of propane gas, propane producers, transporters and wholesalers, and manufacturers and distributors of equipment, containers and appliances. Propane gas is used in over 18 million installations nationwide for home and commercial heating and cooking, in agriculture, in industrial processing and as a clean air alternative engine fuel for both over-the-road vehicles and industrial lift trucks.

The California Air Resources Board (CARB) *Report to the California Legislature on Indoor Air Pollution in California* identifies various sources of indoor air pollution and various options to mitigate its effects. Because propane gas appliances, along with many other sources, are cited as a potential source of indoor air pollution, NPGA submits the following comments.

Methods to Prevent and Reduce Indoor Air Pollution

The CARB report on page 15 addresses methods to prevent and reduce indoor air pollution, and states that "reduction at the source is most effectively achieved through use of low- or zero-emitting appliances." This statement is misleading for several reasons.

- The term 'low-emitting' appliance suggests that emissions from such appliances are dispersed to the surrounding indoor atmosphere. This is not the case for vented propane gas appliances such as furnaces or water heaters. These appliances are listed to existing product safety standards, which have tests that limit the amount of carbon monoxide emitted from the appliance's flue, or combustion chamber. However, because these appliances are specifically designed to exhaust all the products of combustion, including carbon monoxide,

directly to the outside atmosphere, there is no chance that any of the exhaust products can enter the indoor living space when the equipment is properly installed.

- Also, the term 'zero-emitting' appliance is misleading because it suggests that, by definition, there are no emissions associated with these products. The statement in the report implies that such products, if used to replace existing gas appliances, would result in improved indoor air quality.

  As previously noted, vented gas appliances are designed to exhaust all products of combustion directly to the outside atmosphere. Replacement with zero-emitting products, which are essentially powered by electricity, would result in an increased electrical load upstream of where the appliance is installed, specifically at the power plant where the electricity to run the equipment is generated. Therefore, the burden of emissions is merely shifted from the site, where the appliance is installed, to the source, the power plant.

  CARB already acknowledges that a certain percentage of indoor air pollution is caused by outdoor pollution. By shifting the burden of emissions to the power plant, it will have a direct impact on the outdoor pollution and a corresponding impact on the indoor pollution. Thus, the notion that zero-emitting appliances would result in improved indoor air quality is not necessarily true.

Active Exhaust Ventilation

Another approach suggested by CARB to mitigate the effects of indoor air pollution presumably caused by combustion appliances is through the use of active exhaust ventilation. This would have no impact whatsoever on the combustion appliance whose venting system was properly installed as all the products of combustion would be exhausted through the vent to the outside atmosphere.

The purpose of active exhaust ventilation is to address the circumstances in newly constructed homes that are built to a tighter building envelope, which prevents the requisite number of air changes per hour (ACH) in the house. In these situations, mechanical ventilation must be introduced into the house to ensure that the air remains fresh.

Furthermore, the use of exhaust ventilation without the addition of mechanical ventilation air would actually create a worst circumstance. If this ventilation air is not supplied to the house to offset the exhaust, the exhaust would lower the amount of air available for proper combustion for a natural-draft gas appliance. This would likely result in a backdraft condition that would literally suck the products of combustion into the living space rather than exhausting them through the appliance vent. Thus, it would create a worst condition than the condition for which active exhaust ventilation was believed to be aiding.

General Mitigation Options

CARB proposes on page 23 of the report as an option to mitigate indoor air pollution, a requirement that manufacturers submit combustion appliances for emissions testing by an independent laboratory certified by the state, to report the results and require that the results be transmitted to the public via product labeling.

As previously stated, combustion appliances already receive emissions testing during the certification process when seeking to be listed by an independent testing laboratory. There are no emissions tests that the agency can specify that will have any meaning because all vented gas appliances exhaust all the products of combustion to the outdoors. Furthermore, adding a label showing the results of any emissions testing would only serve to confuse the general public. They would likely interpret the emissions results on a label to refer to emissions that are deposited within the living space, which, as noted above, would not occur with a properly installed vent.

Thank you for the opportunity to comment on this report. If you have any questions, please feel free to contact me.

Sincerely,

Michael A. Caldarera
Director, Regulatory and Technical Services